DrinkerBiddle&Reath



Bonnie Allyn Barnett 215-988-2916 bonnie.barnett@dbr.com

Law Offices

One Logan Square 18TH and Cherry Streets Philadelphia, PA 19103-6996

215-988-2700 215-988-2757 fax www.drinkerbiddle.com

NEW YORK
WASHINGTON
LOS ANGELES
SAN FRANCISCO
PRINCETON
FLORHAM PARK
BERWYN
WILMINGTON

March 26, 2003

Via Federal Express
Eileen Furey, Esquire
Office of Regional Counsel (C-14-J)
United States Environmental
Protection Agency
Region V
77 W. Jackson Blvd.

RE: Kalamazoo River Superfund Site

Dear Eileen:

Chicago, IL 60604

On behalf of the Kalamazoo River Study Group, I am enclosing a letter which Limno-Tech, Inc. sent to CH2M-Hill concerning the PCB mass estimates for the exposed sediments in the Plainwell and Ostego City Impoundment. Although Limno-Tech and the FIELDS group have made progress in working together on many issues, the method of geostatistical interpolation used by the FIELDS group overstates the PCB mass in the impoundments, particularly at depth. We believe that the LTI method of interpolation is more accurate and scientifically justified and request that it be included in the RI that CH2M Hill is drafting. We also request that the enclosed information be included in the administrative record for the Site.

As always, feel free to telephone me with any questions. Best regards.

Very truly yours,

Bonnie Allyn Barnett

Enclosure /jg

cc:

Ms. Shari Kolak

J. Michael Davis, Esquire Ms. Joyce Schlesinger Mr. Paul A. Montney

Established 1849



Limno-Tech, Inc.

Excellence in Environmental Solutions Since 1975

March 26, 2003

Mr. Jeff Keiser CH2M-Hill 135 S. 84th St. Suite 325 Milwaukee, WI 53214

Subject: Transmittal of calculated PCB mass by layer, Plainwell and Otsego City Impoundments

Dear Mr. Keiser.

This letter serves to transmit our estimates of PCB mass by layer for the Plainwell and Otsego City Impoundment exposed sediments, based on our final interpolations of all applicable PCB data. This letter serves as a hard copy follow-up to our email of March 24, 2003. It is our understanding that EPA plans to use the FIELDS interpolation, in its current form, in the RI. Given our view, described below, that the FIELDS analysis overestimates the PBC mass, especially at depth, we request that the LTI analysis also be included in the draft RI report.

The estimates summarized in the attached spreadsheet are based on our most current interpolation methods, which involve the following steps: coordinate straightening to account for the irregular shape of the impoundment, kriging of log-transformed PCB, and back-transformation and bias correction to provide estimates of mean concentrations throughout the two impoundments. The current methods are essentially the same as those we discussed with you and the EPA FIELDS group at our meeting in Chicago on November 1, 2002. Since that time, we have adopted the final dataset circulated by FIELDS in early December (email: Vilma Rivera-Carrero, 12/4/02), and have added the final step of bias correction to address concerns that our methods provide local estimates of the geometric mean, rather than the true (arithmetic) mean.

Our methods are consistent with the best current practice in geostatistical interpolation, and as such represent a reasonable estimate of the distribution of PCB in the impoundments. Our methods have been reviewed and endorsed by Dr. Noemi Barabas, a geostatistician and researcher at the University of Michigan.

As noted in our email, our comparisons with EPA's interpolations show significant differences, particularly at depth. As we have expressed to you, we do not believe the interpolation methods utilized by FIELDS reflect the actual PCB mass present in the exposed sediments. Major differences can be characterized as follows:

Vertical extrapolation: in a number of cases, cores show low or decreasing concentrations in the surface layers, and no data at depth. We have used such data to infer locations that are unlikely to have high concentrations at depth, and constrained our interpolation accordingly. This was not done in the FIELDS interpolation, resulting in PCB mass and concentration estimates at depth that are, in many cases, based upon no actual data, unrealistic and in error.

Outward extrapolation: In a number of locations, isolated data are used in the FIELDS interpolation to extrapolate concentration estimates out to the edge of the impoundment (notably, Otsego City, near KPT 79). Because the natural neighbor method used by FIELDS does not take into account the spatial correlation structure of the PCB data, the range to which such concentrations can be extrapolated is unlimited, and produces unrealistic estimates of PCB mass and concentration in several cases.

Effects of PCB Distribution: The natural neighbor method as applied by FIELDS tends to emphasize high concentration data in terms of their influence on neighboring areas. This can be seen clearly in maps of the FIELDS interpolation results with data superimposed, in which low concentration data appear to have very limited influence on interpolated concentrations in the vicinity of higher concentration data. While the natural neighbor method is in itself a valid interpolation method, we

501 Avis Drive Ann Arbor MI 48108 Regional Office in: Washington DC **734-332-1200** Fax: 734-332-1212

www.limno.com

would argue that in this application the disproportionate influence of high concentration samples results in an unreasonable upward bias in estimates of SWAC and mass.

We value the collaborative efforts taken by FIELDS, CH2M-Hill, and LTI to date, including the development of a common, reviewed dataset, discussions regarding appropriate data reduction and interpolation methods, and comparisons of final results. These efforts have contributed significantly to the good faith advancement of the project, and we feel that the FIELDS group in particular has done much to contribute to an atmosphere of openness and high technical standards. We hope to continue with this approach in the future.

We would be happy to discuss any element of our analysis and conclusions with you.

Regards,

Limno-Tech, Inc.

Timothy J. Dekker, Ph.D., P.E.

Senior Project Engineer

Gregory W. Peterson

Vice President



PLAINWELL

op Depth	Bottom Depth	Min. Conc.	Max Conc. I	Density (FIELDS Origina Volume (cu yd) Ma	iResults ss (lbs)	LTI Results using Volume (cu yd)	FIELOS Data Mass (lbe)	LTI Results using Volume (cu yd)	LTI GSLIB Krigng Mass (bs)
AYER 1	6		0.33	2000	1,268.5	0.2	672.2	0.2	964 8	0.4
0	6	0.33	1	2000	1,490.7	21	1,458.3	20	1,892.6	25
0	•	. 1	2	2000	3,003.7	8.8	2,953.7	8.6	3,661 1	11.1
0	6	2	5	2000	7,879.6	55.2	7,800.0	54.6	9,229.6	63.8
0		5	10	2000	9,814 8	145,1	9,705.6	143.4	11,244 4	167.3
0		10	25	2000	21,390.7	718.9	21,250.0	714.4	13,651 9	424.0
0			150	2000	7,316.7	525.7	7,281.5	523.3	6,057.4	443.2
-					.,					-
ubtotals:				1	52,164.8	1,455.9	51,122.2	1,448.6	44,701.9	1,112.4
AYER 2	1:	2 0	033	2000	447 1	01	3230	<u>a1</u>	1,1493	0.5
6				2000	3,216.2	49	Į.	. 48	4,225 9	5.7
6				2000	5,987 2	178		177	8,363 0	25 2
									ţ	
6				2000	9,841 6	64 6	i i	638		115.3
6				2000	10,350.9	153.4	10,255.3	152.0		95.3
6				2000	10,624 3	342.2	ţ.	340.3	5,681 5	180.5
5	1.	7 25	150	2000	10,215 3	823.4	10,1370	816.3	2,759 3	233 8
Subtotals					50,884.8	1,400.4	50,137.8	1,395.0	47,225.3	656,3
AYER J	2	4 (0 33	2000	4,577 1	2.3	4,337 6	23	5,783 5	2:
12				2000	25,161 0	31 3	Į.	31 0		49 1
12				2000	17,708 1	49?		493		68 (
12				2000	16,818 8	120 1	1	119 4		95 1
12				2000	9,222 1	132.2	l .	131 3	1	101
12				2000	13,132.6	423 8		421 3		741
12				2000	5,074 9	425 2		418 2	1	202:
		• "	130	2000	5,574 9		f	7/6/	22003	202.
Subtotals	:				93,694.6	1,184.6	92,766.6	1,172.4	93,323.9	595 ;
LAYER 4	4 3	6 (0 33	2000	15 379 4	51	15,101 3	50	30,850 6	11:
2	4 3	6 03:	3 1	2000	23,883 6	30 6	23,754 1	30 5	31 718 9	38
2-			1 2		16 375 2	47 8	Į.		Į.	34
2-			2 5		11,900 0	73 :	1		1	42
2			5 10		38170	53 (1			22
2		16 1			3 527 2	109 5	\		1	41
2		6 2			1,333 3	97 9	Ī			80
					l		L		Ĺ	
Subtotals	r		 -		76,215.7	417.3	75,549.6	411	#6,216.1	271.
LAYER 5	6	18	j 033	2000	12,106 6	3 5	9 14,200 0	51	51,092 6	17
3		18 03			19 638 7	25.0				22
3			1 2		10 017 1	28 (1		1	10
			2 5		į.	33.9	1		1	7
3			5 10			81			1	4
			0 25		1	61				
3			5 150		{	65	1		1	
3	•	10 2	3 130	200	3037	63	1 4013	. 62	1 "	J
Subtotal	·				48,951.5	172.	59,496.3	196.	77,292.5	67.
LAYER 6	8	50	0 0 33	2000	9,573.5	2	1 6,572.4	2	19,217.4	- 6
		~ 50 03			ł	2	}		}	
					Í				i	
			1 2		İ	2:	1		ì	
			2 5		j.	12.5	1		1	
			5 10			24 (
4	18	50 1	0 25		!	96	8 3,290 2	96	6 00	0
4	18	50 2	5 150	2000	2,798 3	318	2,7648	3131	00	0
Subtotal	s;				22,387.2	459,	9 19,337.7	454.9	25,535.8	16.
VADIOUS.										

OTSEGO CITY

0		Bottom Depth	Man. Conc.	Max. Conc. 1	Density	FIELDS On Volume (cu yd)	genalResults Mass (Ros)	LTI Results using I Volume (cu yd)	TELDS Data Mass (fbs)	LTI Results using Volume (cu yd)	LTI GSLIB Kriging Mass (bs)
0 6 1 2 2 500	AYER 1	6	0	0 33	2000	65,496.3	11 7	62,042.6	11.7	109,600.0	22.9
0 6 2 5 5000 46,5643 298 4,2537 2944 37,702.7 213.0 0 6 5 10 2000 34,416.5 35.47 34,222 50.3 14,484.5 288.6 0 6 10 22 2000 11,000 50.0 12,116.5 1519 \$11,027.9 20.3 53.185 140.5 0 6 25 110 2000 \$2,216.5 1519 \$1,116.5 50.8 565.2 41.1 1,000 50.0 1 1,000 5	0	6	0.33	1	2000	32,533.3	421	32,290.7	41 8	38,600.0	48.4
0 6 5 10 200 75.418.5 153.7 50.222 50.9 14.96.3 20.0 0 6 10 25 200 11.2867 246 11.227.3 23.5 5.318.5 10.0 0 6 25 150 200 5.218.5 518.9 5.18.5 50.8 565.2 441 12.0 0 6 25 150 200 5.218.5 518.9 5.18.5 50.8 565.2 441 12.0 0 6 25 150 200 5.218.5 518.9 5.18.5 50.8 565.2 441 12.0 0 6 25 150 200 5.218.5 518.9 51.18.5 50.8 555.2 141 12.0 0 6 25 150 200 5.218.5 518.9 51.18.5 50.8 555.2 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12	0	6	1	2	2000	39,538.9	116.4	39,290.7	115.7	26,124 1	75.8
0 6 10 25 100 200 11,2957 294 11,227.9 2935 5,318.5 140.5	0	6	2	5	2000	46,646.3	296.9	46,253.7	294.4	37,703.7	241 3
Debteron: 150 2000 5.216.5 516.0 5.116.5 506.6 565.2 411.	0	6	5	10	2000	36,418.5	534.7	36,222.2	531.9	14,846.3	209.8
MATER 12	0	6	10	25	2000	11,296.7	294 8	11,227.8	293.5	5,318.5	1405
ATTRE 8 12 0 0.33 2000 106,306.6 25.4 101,067.5 222 105,717.4 35.7 6 12 0.33 1 2000 17,751.6 50.6 13,201.8 50.5 54,770.4 66. 6 12 1 2 2 5 5000 17,751.5 115.0 17,751.9 50.0 19,825.9 544. 6 12 2 5 5 5000 17,751.5 115.0 17,751.4 114.9 13,051.9 22. 15.0 12 10 25 5000 16,7251.5 115.0 17,751.5 115.0 17,751.1 114.9 13,051.9 22. 15.0 12 10 25 5000 16,7251.5 115.0 17,751.5 115.0 17,751.1	0	6	25	150	2000	5,218.5	518.9	5,118.5	508.6	585.2	41 1
ATTRE 8 12 0 0.33 2000 106,306.6 25.4 101,067.5 222 105,717.4 35.7 6 12 0.33 1 2000 17,751.6 50.6 13,201.8 50.5 54,770.4 66. 6 12 1 2 2 5 5000 17,751.5 115.0 17,751.9 50.0 19,825.9 544. 6 12 2 5 5 5000 17,751.5 115.0 17,751.4 114.9 13,051.9 22. 15.0 12 10 25 5000 16,7251.5 115.0 17,751.5 115.0 17,751.1 114.9 13,051.9 22. 15.0 12 10 25 5000 16,7251.5 115.0 17,751.5 115.0 17,751.1											
6 12 0 033 2000 145,886 32 4 105,875 252 196,171 4 55. 6 12 033 1 2000 17,675 5 50 17,751 9 50 6 1825 9 54,774 6 6 12 1 2 2 55.000 17,675 5 150 17,751 9 50 6 1825 9 54,774 6 6 12 2 5 10 200 17,675 5 150 17,751 9 50 6 1825 9 54,774 6 6 12 2 5 10 200 17,675 5 115 6 17,751 1 114 9 13,001 9 82,101 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Subtotals:					237,118.5	1,815.4	232,448.3	1,797.5	232,777.8	779.8
6 12 033 1 2000 43,494 508 43,2019 505 54,7704 56. 6 12 1 2 2 200 17,555 198 17,524 1149 13,0019 204 14,703 5 198 17,524 1149 13,0019 22,000 19,724 17,524 114,778 253 13,574 1 20,0019 22,001 14,703 3 1,403 0 14,503 4 20,003 3 50,001 14,703 3 1,403 0 14,503 4 20,003 3 50,001 14,703 3 1,403 0 14,503 4 20,003 3 50,001 14,703 3 1,403 0 14,503 4 20,003 3 12,403 1 1,403 0 14,503 4 20,003 1 1,504 1 1,5	LAYER 2										
6 12 1 2 2000 17,855 6 50 8 17,735 9 50 8 19,225 9 544 6 12 2 5 5000 17,735 1 115 9 17,734 1 114 9 13,051 9 82,											
6 12 2 5 5000 17,631 5 115 6 17,534 1 1149 13,051 9 52, 6 12 10 25 000 19,240 7 244 8 18,172 8 253 1 5,724 1 80, 6 12 10 25 2000 18,720 4 008 5 18,633 4 008 4 2033 3 58, 6 12 25 150 2000 14,733 3 1,403 0 14,638 13,854 2052 155, 18,998649 1 12 25 150 2000 14,733 3 1,403 0 14,638 13,854 2052 155, 18,998649 1 12 25 150 2000 27,4814 7 52 4 25,650 6 52 1 20,034 1 20,00 1 20,											
6 12 5 10 200 15,240.7 2848 16,177.8 283.1 5,774.1 80.0 6 12 10 25 200 16,720.4 605 18,820.4 604 2303.3 38.4 604 12 205 150 200 14,781.3 1,430.0 14,830.9 13,854 225 2 15.		12						1		1	54.0
8 12 10 25 2000 18,720.4 600.5 18,820.4 600.4 2,003.3 58. 8 172 25 150 2000 14,783.3 1,403.0 14,838.0 1,365.4 228.2 15. JMARPET	6	12		•				1		1	82.6
6 12 25 150 2000 14,783.3 1,403.0 14,653.0 1.385.4 255.2 155. LAYER 3 12 24 0 0 0.33 2000 274,8147 624 284,800.0 62,11 300,650.8 977 12 24 0.33 1 2000 33,725.5 924 02,41 0 91 6 10,669.4 30,172 12 24 1 2 2000 34,814.6 225.9 34,470.4 222.7 6,370.4 40,172 12 24 1 25 2000 34,814.6 225.9 34,470.4 222.7 6,370.4 40,172 12 24 1 0 25 2000 35,711 6066 28,070.4 500.0 977.6 28,172 12 24 1 0 25 2000 8,571.1 623 8,560.7 622 2 55.6 33 13 24 36 0 33 1 2000 18,872.4 226 110,347.7 22.3 1555.3 14,440.3 2,150.8 43	6	12				i		1			80.4
Debinosists 198,9927 2,593 133,772.4 2,516.1 252,486.1 392	_	_				l		1		l	58.4
LAYER 3 12 24 0 0 033 2000 274,6147 624 258,500 6 621 350,031 6 77 12 24 0 33 1 2000 83,033 9 74 9 62,742.4 77.5 50,031 6 77 12 24 1 2 2000 32,785 6 82 6 32,451 0 91 6 10,865 4 30 12 24 5 10 2000 32,785 6 82 6 32,451 0 91 6 10,865 4 30 12 24 5 10 2000 34,814 6 225 9 34,470 4 220 7 6,370 4 40 12 24 5 10 250 2000 20,325 9 284 0 20,137 0 281 3 3,418 5 48 12 24 15 150 2000 9,574 1 622 6 9,566 7 622 2 55 6 3 35,0610435	6	12	25	150	2000	14,783.3	1,403.0	14,638.9	1,385 4	235 2	15.6
LAYER 3 12 24 0 0 033 2000 274,6147 624 258,500 6 621 350,031 6 77 12 24 0 33 1 2000 83,033 9 74 9 62,742.4 77.5 50,031 6 77 12 24 1 2 2000 32,785 6 82 6 32,451 0 91 6 10,865 4 30 12 24 5 10 2000 32,785 6 82 6 32,451 0 91 6 10,865 4 30 12 24 5 10 2000 34,814 6 225 9 34,470 4 220 7 6,370 4 40 12 24 5 10 250 2000 20,325 9 284 0 20,137 0 281 3 3,418 5 48 12 24 15 150 2000 9,574 1 622 6 9,566 7 622 2 55 6 3 35,0610435	Subtotals:					236,992.7	2,539.9	232,722.4	2,518.1	232,458.1	392.5
12											
12	LAYER 3	24		0 33	2000	274,614.7	62 4	258,900 6	62.1	380,438 9	97 4
12	12	24	0 33	1	2000	63,033.9	749	62,742.4	74.5	50,031 6	52.4
12 24 5 10 2000 20.3259 2340 20.1370 2813 3.4185 48 12 24 10 25 2000 26.3111 806 6 28.070 4 8000 977 8 28 12 24 25 150 2000 8.574 1 623 6 9.566 7 622 2 55 6 3 Subtotals: 483,446.3 2.155 3 443,235.4 2.158 3 452,152 300 LAYER 4 24 36 0 0.33 1 2000 18.572 4 22 5 18,324 7 22 3 1 655 3 1 1 24 36 0.33 1 2000 18.572 4 22 5 18,324 7 22 3 1 655 3 1 1 24 36 1 2 2000 20.318 56 2.015 0 56 89 60 3 1 24 36 5 1 0 2000 577 8 79 566 7 77 222 2 3 3 24 36 1 0 25 2000 577 8 79 566 7 77 222 2 3 3 24 36 1 0 25 2000 296 3 96 292 6 95 593 1 1 24 36 5 10 200 296 3 96 292 6 95 593 1 1 24 36 5 10 25 2000 296 3 96 292 6 95 593 1 1 24 36 25 150 2000 726 3 96 292 6 95 593 1 1 24 36 25 150 2000 296 3 96 292 6 95 593 1 1 24 36 25 150 2000 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	12	24	,	1 2	2000	32,765 6	92.6	32,451 0	91 6	10,869 4	30.3
12 24 5 10 2000 20.3259 2340 20.1370 2813 3.4185 48 12 24 10 25 2000 26.3111 806 6 28.070 4 8000 977 8 28 12 24 25 150 2000 8.574 1 623 6 9.566 7 622 2 55 6 3 Subtotals: 483,446.3 2.155 3 443,235.4 2.158 3 452,152 300 LAYER 4 24 36 0 0.33 1 2000 18.572 4 22 5 18,324 7 22 3 1 655 3 1 1 24 36 0.33 1 2000 18.572 4 22 5 18,324 7 22 3 1 655 3 1 1 24 36 1 2 2000 20.318 56 2.015 0 56 89 60 3 1 24 36 5 1 0 2000 577 8 79 566 7 77 222 2 3 3 24 36 1 0 25 2000 577 8 79 566 7 77 222 2 3 3 24 36 1 0 25 2000 296 3 96 292 6 95 593 1 1 24 36 5 10 200 296 3 96 292 6 95 593 1 1 24 36 5 10 25 2000 296 3 96 292 6 95 593 1 1 24 36 25 150 2000 726 3 96 292 6 95 593 1 1 24 36 25 150 2000 296 3 96 292 6 95 593 1 1 24 36 25 150 2000 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	12	24		2 5	2000	34,814.8	225 9	34,470.4	223 7	6,370 4	40 6
12 24 10 25 2000 26,3111 8066 28,070 4 800 977 8 22 12 24 25 150 2000 9,574 1 623 6 9,566 7 623 2 56 6 3 Subtrotals:	12							i '			48 4
112 24 25 150 2000 8.574 1 623 6 8.596 7 623 2 55 6 3 Subtotable:						Į.				l .	. 28 2
Subtotals: 481,446.3 2,193.9 442,338,4 2,198.9 432,192.2 366 LAYER 4 24 36 0 0 0 0 30 2000 303 006 68 8 296 687 1 68 3 320 986 1 54 24 36 0 30 1 2 2000 2003.8 56 2015 0 58 396 3 1 24 36 1 2 2000 1370 4 8 8 1,355 8 65 400 0 2 24 36 5 10 2000 577 8 79 566 7 77 222 2 3 24 36 10 25 2000 2003 96 292 8 95 593 1 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 Subtotals: 1276,139,4 123,0 319,441.8 121,9 329,718 1 44 36 48 0 0 0 33 2000 72,009 9 75 136,111 1 132 200,814 6 29 36 48 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						İ		1		i	32
LAYER 4 24 36 0 0 033 2000 18,572 4 22 6 19,324 7 22 3 1,655 3 1 1 24 36 0 1 2 2000 203 8 5 6 8 2015 0 5 8 386 3 1 2 4 36 1 2 2000 203 8 5 6 2015 0 5 8 386 3 1 2 4 36 5 10 2000 577 8 79 566 7 77 222 2 3 2 4 36 10 25 2000 203 8 9 6 282 6 9 5 593 1 2 4 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		•			2.00		-	1			
24 36 0 0 33 2000 18.5724 22 5 18.3247 63 3 329861 54 24 36 1 2 2000 18.5724 22 5 18.3247 22 3 16553 1 24 36 1 2 2000 2033 8 56 18.3247 22 3 16553 1 24 36 5 2 5 2000 13704 8 8 13.3556 8 5 4000 2 24 36 5 10 2000 577 8 79 5667 77 222 2 3 24 36 10 25 2000 2963 96 2926 95 593 1 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 25 24 36 25 150 2000 27863 96 2926 95 593 1 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 25 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Subtotals:					461,440.3	2,169.9	442,338.4	2,158 3	432,162.2	300 5
24 36 0 0 33 2000 18.5724 22 5 18.3247 63 3 329861 54 24 36 1 2 2000 18.5724 22 5 18.3247 22 3 16553 1 24 36 1 2 2000 2033 8 56 18.3247 22 3 16553 1 24 36 5 2 5 2000 13704 8 8 13.3556 8 5 4000 2 24 36 5 10 2000 577 8 79 5667 77 222 2 3 24 36 10 25 2000 2963 96 2926 95 593 1 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 25 24 36 25 150 2000 27863 96 2926 95 593 1 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 25 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	I AYER A										
24 36 1 2 2000 2038 56 20150 58 3963 1 24 36 2 5 2000 1 370 4 8 6 1,355 6 85 400 0 2 2 2 3 3 6 5 10 2000 577 8 7 9 566 7 7 7 222 2 3 3 2 4 36 10 25 2000 296 3 9 6 282 8 9 5 59 3 1 2 2 4 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	24	36		0 33	2000	303 308 8	68 8	296 887 1	68 3	326 986 1	54 2
24 36 2 5 2000 1 370 4 8 8 1,355 6 8 5 400 0 2 2 2 4 36 5 10 2000 577 8 7 9 566 7 7 7 222 2 3 3 2 4 36 10 25 2000 296 3 9 6 292 8 9 5 59 3 1 2 4 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	24	36	0 3:	3 1	2000	18,572 4	22 5	18,324 7	22 3	1 655 3	1 7
24 36 5 10 2000 577 6 79 5667 77 2222 3 24 36 10 25 2000 2963 96 292 6 95 593 1 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 Subtotals:	24	36		1 2	2000	2 033 8	5 6	2,015 0	5 6	396 3	11
24 36 10 25 2000 2963 96 2926 95 593 1 24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Subhotals: 326,159.4 123.2 319,441.4 121.9 329,719.1 64 LAYER 5 36 48 0 0 033 1000 72,609.3 75 136,1111 13.2 203,614.8 29 36 48 1 2 2000 42.2 0 1 44.4 0 1 0.0 0 36 48 2 5 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 36 48 5 10 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 36 48 10 25 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 36 48 10 25 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 36 48 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 36 48 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 36 48 60 0 33 1 2000 NA NA NA NA NA NA 0 0 0 0 48 60 0 33 1 2000 NA NA NA NA NA NA 0 0 0 0 48 60 2 5 2000 NA NA NA NA NA NA 0 0 0 0 48 60 2 5 2000 NA NA NA NA NA NA NA 0 0 0 48 60 2 5 2000 NA NA NA NA NA NA NA 0 0 0 48 60 2 5 2000 NA NA NA NA NA NA NA 0 0 0 48 60 2 5 2000 NA NA NA NA NA NA NA 0 0 0 48 60 2 5 2000 NA NA NA NA NA NA NA 0 0 0 48 60 10 25 2000 NA NA NA NA NA NA NA 0 0 0 48 60 25 150 2000 NA NA NA NA NA NA NA 0 0 0 48 60 25 150 2000 NA NA NA NA NA NA NA 0 0 0 544 60 25 150 2000 NA NA NA NA NA NA NA 0 0 0 545 60 25 150 2000 NA NA NA NA NA NA NA NA 0 0 0 546 60 25 150 2000 NA NA NA NA NA NA NA NA 0 0 0 5545 60 25 150 2000 NA NA NA NA NA NA NA NA 0 0 0 5545 60 25 150 2000 NA NA NA NA NA NA NA NA NA 0 0 0 5545 60 25 150 2000 NA NA NA NA NA NA NA NA NA 0 0 0 5545 60 25 150 2000 NA NA NA NA NA NA NA NA NA NA NA 0 0 0 5545 60 25 150 2000 NA NA NA NA NA NA NA NA NA NA NA NA NA	24	36		2 5	2000	1 370 4		1,355 6	6 5	400 0	2.7
24 36 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	24	36		5 10	2000	577 8	7 9	566 7	7 3	222 2	3 1
Sublotals: 128,159,4 123.0 319,441.6 121.8 329,719.1 64 LAYER 5 38	24	36	11	0 25	2000	296 3	96	292 6	9 :	59 3	14
LAYER \$ 39	24	36	2	5 150	2000	00	0.00	00	0.0	00	0.0
LAYER \$ 39						220 470 4					
36	Subtotals:					326,139.4	123.0	319,441.8	121.3	329,719 1	
36	LAYER S					77.000		E			
36						1		1		1	
36	l					1					00
36	, ss			. 2	200	1		1		ł	00
36 48 10 25 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	35	. 48			~~	1	, ,	1]	
36 48 25 150 2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1									l	
Subhobals: 77,929,3 7,9 136,433,3 13 6 203,614.8 29 LAYER 6 48 60 0 0 033 2000 NA NA NA NA NA NA NA 13,513.9 1 48 60 1 2 2000 NA NA NA NA NA NA OO 0 48 60 2 5 2000 NA NA NA NA NA NA OO 0 48 60 5 10 2000 NA NA NA NA NA NA OO 0 48 60 5 10 2000 NA NA NA NA NA OO 0 48 60 10 25 2000 NA NA NA NA NA NA OO 0 48 60 10 25 2000 NA NA NA NA NA NA OO 0 5 Subhobals: NA NA NA NA NA NA NA OO 0 5 Subhobals: NA NA NA NA NA NA NA NA NA NA NA NA NA	1					1		1		ì	
LAYER 6 48 60 0 0 033 2000 NA NA NA NA NA 13,513 9 1 48 60 0 33 1 2000 NA NA NA NA NA NA 00 0 48 60 1 2 2000 NA NA NA NA NA NA 00 0 48 60 2 5 2000 NA NA NA NA NA 00 0 48 60 5 10 2000 NA NA NA NA NA NA 00 0 48 60 10 25 2000 NA NA NA NA NA NA 00 0 48 60 25 150 2000 NA NA NA NA NA NA O0 0 5ubliotalis:	36	48	. 2	o 150	2000	ή "	, 01		a c	΄ ີໍ	0.0
48 60 0 033 10000 NA NA NA NA NA NA 13,513.9 1 48 60 033 1 2000 NA NA NA NA NA NA 00 0 48 60 1 2 2000 NA NA NA NA NA NA 00 0 48 60 5 10 2000 NA NA NA NA NA NA 00 0 48 60 10 25 2000 NA NA NA NA NA NA 00 0 48 60 25 150 2000 NA NA NA NA NA NA 00 0 50 150 250 NA NA NA NA NA NA NA NA 00 0 50 150 250 NA NA NA NA NA NA NA NA 13,513.9 1	Subtotals:					72,929.3		136,433.3	13 (203,414.8	29.5
48 60 0 033 10000 NA NA NA NA NA NA 13,513.9 1 48 60 033 1 2000 NA NA NA NA NA NA 00 0 48 60 1 2 2000 NA NA NA NA NA NA 00 0 48 60 5 10 2000 NA NA NA NA NA NA 00 0 48 60 10 25 2000 NA NA NA NA NA NA 00 0 48 60 25 150 2000 NA NA NA NA NA NA 00 0 50 150 250 NA NA NA NA NA NA NA NA 00 0 50 150 250 NA NA NA NA NA NA NA NA 00 0	LAVES										
48 60 1 2 2000 NA NA NA NA NA OO 0 48 60 2 5 2000 NA NA NA NA NA NA OO 0 0 48 60 25 150 2000 NA NA NA NA NA NA NA OO 0 0 0 48 60 25 150 2000 NA NA NA NA NA NA NA NA NA OO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		60		0 033	2000	NA T	NA NA	NA NA	NA .	13,513 9	1;
48 60 2 5 2000 NA NA NA NA NA 0 0 0 0 48 60 10 25 2000 NA NA NA NA NA NA 0 0 0 0 48 60 25 150 2000 NA NA NA NA NA NA NA NA NA NA NA NA NA	48	60	0.3	3 1	2000	NA	NA	NA.	NA	00	0.0
48 60 5 10 2000 NA NA NA NA NA 0.0 0 48 60 10 25 2000 NA NA NA NA NA 0.0 0 48 60 25 150 2000 NA NA NA NA NA NA 0.0 0 Subtotals: NA NA NA NA NA 13,513.9 1	48	. 60)	1 2	2000	NA NA	NA	NA.	NA	00	0.0
48 60 10 25 2000 NA NA NA NA NA O 0 0 48 60 25 150 2000 NA NA NA NA NA NA NA NA 13,513.9 1	48	60	1	2 5	2000	NA NA	NA	NA.	NA	0.0	00
48 60 10 25 2000 NA NA NA NA NA O 0 0 48 60 25 150 2000 NA NA NA NA NA NA NA NA 13,513.9 1	48	1 60	1	5 10	2000	NA NA	NA.	NA.	NA	00	0.0
48 60 25 150 2000 NA NA NA NA NA CO O Subtotals: NA NA NA NA 13,513.9 1						i		Į.			
Subtotals: NA NA NA NA 13,513.9 1	ì					i		ł			
	~	•	•								
GRAND TOTALS: 1,334,640 3 6,656,1 1,363,382.0 6,605.6 1,464,246.0 1,668	Subtotals	:				NA.	NA NA	NA NA	NA .	13,513.9	1,5
GRAND TOTALS: 1,234,640.3 6,656.1 1,263,382.0 6,605.6 1,464,246.0 1,568											
	GRAND TO	OTALS:				1,334,640 3	6,656,	1,363,382.0	6,605.6	1,454,246.0	1,568.1